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1 specification on page 17 middle paragraph and page 23 first paragraph
2 respectively.”

3 Applicants would like to thank the Office for noting claims 13-33 as
4 allowable. Applicants are, however, somewhat confused by the request to narrow
5 the terms “radial basis function” and “cardinal basis function.” It is Applicant’s
6 understanding and belief that the Freeman et al. reference [UPSN 6,115,052] cited
7 against other claims in the present application does not teach all of the elements in
8 any of claims 13-33. Furthermore, the Office has not stated that the terms “radial
9 basis function” and “cardinal basis function,” as the are recited in claims 13-33,
10 are indefinite or otherwise improper. It is Applicant’s position that the terms
11 “radial basis function” and “cardinal basis function” are sufficiently clear, both in
12 respect to their meaning to one skilled in the art and to their definition in the
13 present application. Furthermore, as noted in the specification, both radial basis
14 functions and cardinal basis functions may have multiple forms that are applicable
15 to the present invention. As such, Applicants do not wish to unduly limit any of
16 claims 13-33 to any one specific form of radial basis function or cardinal basis
17 function.

18 Again, it is Applicant’s position that the terms “radial basis function” and
19 “cardinal basis function,” as used in claims 13-33, are sufficiently definite. As
20 such, claims 13-33 are believed to be in condition for allowance, and such
21 allowance is respectfully requested.
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1 **Claim Rejections**

2 **Claim Rejection - 35 USC §102**

3 **Claim 1** stands rejected under 35 USC §102(a) as being unpatentable over
4 Freeman et al. [USPN 6,115,052]. As will now be described, it is Applicant's
5 position that the Freeman reference ("Freeman") does not teach or suggest each of
6 the elements of claim 1.

7 Claim 1 reads as follows:

8 1. A blending method comprising:

9 providing a set of examples that pertain to a shape or motion that is
10 to be animated, the examples being provided relative to a multi-
11 dimensional abstract space defined by at least one of an adjective and an
12 adverb;

13 selecting a point within the multi-dimensional abstract space that
14 does not coincide with a point that is associated with any of the examples,
15 the selected point corresponding to a shape or motion within the abstract
16 space;

17 computing a single weight value for each of the examples; and

18 combining the single weight values for each of the examples in a
19 manner that defines an interpolated shape or motion that is a blended
20 combination of each of the examples of the set of examples.
21

22
23 As noted in Section 2131 of the Manual of Patent Examining Procedure
24 (the "MPEP"):
25

1 A claim is anticipated only if each and every element as set forth in
2 the claim is found, either expressly or inherently described, in a single prior
3 art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d
4 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention
5 must be shown in as complete detail as is contained in the ... claim."
6 Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913,
7 1920 (Fed. Cir. 1989). (Emphasis added).

8
9 As defined on page 10, lines 1-20 of the present application, "adjectives or
10 adverbs define an abstract space and each adjective or adverb represents a separate
11 axis in this abstract space." Claim 1 was amended to recite the abstract space as
12 being defined by at least one of an adjective and an adverb.

13 Freeman does not mention, teach, or suggest a multi-dimensional abstract
14 space defined by at least one of an adjective and an adverb. As such, the Freeman
15 does not, and can not, teach the act of providing examples "relative to a multi-
16 dimensional abstract space," as recited in claim 1. Likewise, the Freeman does
17 not, and can not, teach the act of "selecting a point within the multi-dimensional
18 abstract space," as recited in claim 1.

19 With respect to the act of "computing" and "combining" of claim 1, it was
20 stated in the May 21, 2003, Office Action that:

21
22 Freeman discloses, "computing a single [sic] and combining the
23 single weight values for each of the close quotation, in (Col. 2, lines 7-24)
24 equation 1, which reflect the weights of the image data (computing and
25

1 combining the weight values), the priors over human motions, and
2 interactively specified to-d point matches.

3 With respect to cited portion of Freeman, Equation 1, and the text
4 accompanying Equation 1, read as follows:

$$5 \quad E = (\bar{R} - \bar{f}(\bar{\alpha}))^2 + \lambda_1 (\bar{\alpha}^T \Lambda^{-1} \bar{\alpha}) + \lambda_2 \sum_i (\bar{I}_i - P_i \bar{\alpha})^2,$$

6
7 where $E(\bar{\alpha})$ is the energy function to be minimized by the optimal
8 coefficients $\bar{\alpha}$ to be found, \bar{R} is the vector of sensor responses over time
9 from the image data. The function \bar{f} converts $\bar{\alpha}$ body motion coefficients to
10 predicted sensor responses. \bar{I}_i is the i th point position specified by the user,
11 and P_i projects the α coefficients onto the corresponding i th stick figure part
12 2-d position. λ_1 and λ_2 are constants which reflect the weights of the image
13 data, the priors over human motions, and the interactively specified 2-d
14 point matches.

15 As noted above in the cite portion of Freeman, " λ_1 and λ_2 are constants
16 which reflect the weights of the image data." As will be appreciated, this statement
17 that does not specify how λ_1 and λ_2 "reflect" weights of an image. Furthermore,
18 Applicants have been unable to locate anywhere in Freeman where it is shown or
19 stated that λ_1 and λ_2 represent, or are used to compute, "a single weight value for
20 each of the examples." Nor have Applicants been able to locate anywhere in
21 Freeman where it is shown or stated that λ_1 and λ_2 represent, or are used to
22 compute, "weight values for each of the examples in a manner that defines an
23 interpolated shape or motion that is a blended combination of each of the
24 examples of the set of examples." Rather, as stated in column 9, lines 30-31 of
25 Freeman, λ_1 and λ_2 "represent observations and user noise strengths."

1 As noted above, section 2131 of the MPEP "The identical invention must
2 be shown in as complete detail as is contained in the ... claim." As such, it is
3 inappropriate for the Office to merely recite a portion of Freeman that says that λ_1
4 and λ_2 are constants which reflect the weights of the image data, and then to
5 extrapolate that simple statement to cover the acts of "computing a single weight
6 value for each of the examples," and "combining the single weight values for each
7 of the examples in a manner that defines an interpolated shape or motion that is a
8 blended combination of each of the examples of the set of examples."

9 Again, Applicants can find no indication in Freeman that λ_1 and λ_2 are the
10 results of, or used in performing the acts of, "computing" and/or "combining" as
11 recited in claim 1. Furthermore, the Applicants respectfully request that if the
12 rejection of claim 1 is sustained based on the description of λ_1 and λ_2 in
13 Freeman, the Office provides cites to an area or areas of the text of Freeman where
14 the acts of "computing" and/or "combining," as recited in claim 1, are set forth in
15 "as complete detail as is contained in the ... claim."

16 As described, Freeman fails to teach or suggest all of the elements of claim 1.
17 As such, it is believed that claim 1 is allowable over Freeman, and such allowance
18 is respectfully requested.

19 **Claims 2 – 11** each depend in some form from claim 1. As such, each of
20 claims 2 – 11 is necessarily allowable Freeman by virtue of this dependency. Each
21 of claims 2 - 11 are also allowable for their own recited features that, in
22 combination with the features recited in claims 1, are neither disclosed nor
23 suggested by Freeman.
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1 **Claim 34** stands rejected under 35 USC §102(a) as being unpatentable over
2 Freeman. As will now be described, it is Applicant's position that Freeman does
3 not teach or suggest each of the elements of claim 34.

4 Claim 34 reads as follows:

5 34. A blending method comprising:

6 defining a set of examples that pertain to a form or motion that is to be
7 animated, the examples being provided relative to a multi-dimensional abstract
8 space defined by at least one of an adjective and an adverb;

9 examining a plurality of forms or motions that are animated within the
10 abstract space from the defined set of examples;

11 identifying at least one form or motion that is undesirable;

12 selecting a form or motion from a location within the abstract space that is
13 proximate a location that corresponds to the undesirable form or motion; and

14 replacing the undesirable form or motion with the selected form or motion
15 to provide a pseudo-example that constitutes a linear sum of the examples of the
16 set of examples.

17
18 With respect to the "defining" act of claim 1, it should be noted that the
19 claim recites "the examples being provided relative to a multi-dimensional abstract
20 space being defined by at least one of an adjective and an adverb." As defined on
21 page 10, lines 1-20 of the present application, "adjectives or adverbs define an
22 abstract space and each adjective or adverb represents a separate axis in this
23 abstract space."
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1 Freeman does not mention, teach, or suggest a multi-dimensional abstract
2 space. As such, the Freeman does not, and can not, teach the act of defining
3 examples that are provided "relative to a multi-dimensional abstract space," as
4 recited in claim 34.

5 With respect to the act of "replacing," recited in claim 34, it is stated in the
6 May 21, 2003, Office Action that:

7 Freeman discloses, "replacing the undesirable form or motion with
8 the selected form or motion to provide a pseudo-example that constitutes a
9 linear sum of the examples of the set of examples," in (Col. 29, part of the
10 program) that call to remove artificial (pseudo) edges.

11
12 As defined on page 26, lines 10-15 of the present application, a pseudo-
13 example is an interpolated form or motion in the abstract space that is moved to a
14 location in the problem region. As recited in claim 34, this pseudo-example
15 constitutes a linear sum of the examples of the set of examples.

16 Put simply, it is difficult to see how the act of "removing artificial edges" is
17 the equivalent to the act of moving a pseudo-example comprising a linear sum of
18 the examples of the set of examples from one location in an abstract space to
19 another. First, the artificial edge of Freeman is not described as an interpolated
20 form or motion in an abstract space. Second, moving and removing are quite
21 different actions.

22 As described, Freeman fails to teach or suggest all of the elements of claim
23 34. As such, it is believed that claim 34 is allowable over Freeman, and such
24 allowance is respectfully requested.
25

1 **Claims 35 – 38** each depend in some form from claim 34. As such, each of
2 claims 35 – 38 is necessarily allowable over Freeman by virtue of this
3 dependency. Each of claims 35 - 38 are also allowable for their own recited
4 features that, in combination with the features recited in claims 34, are neither
5 disclosed nor suggested by Freeman.

6 **Claim 39** stands rejected under 35 USC §102(a) as being unpatentable over
7 Freeman. As will now be described, it is Applicant's position that Freeman does
8 not teach or suggest each of the elements of claim 39.

9 Claim 39 reads as follows:

10 39. A blending method comprising:

11 defining at least two examples of a form in a multi-dimensional
12 abstract space, the multi-dimensional abstract space being defined by at
13 least one of an adjective and an adverb, a first of the example forms being
14 defined in a first position in the multi-dimensional abstract space and a
15 second of the example forms being defined in a second position in the
16 multi-dimensional abstract space that is different from the first position;
17 and

18 computing a form in the first position such that when the computed
19 form is subjected to a transform blending operation that places the
20 computed form in the second position, it will match the second example
21 form.

22
23 Claim 39 has been amended to recite the at least two examples being
24 defined with respect to a multi-dimensional abstract space being defined by at
25 least one of an adjective and an adverb. As noted above, Freeman does not

1 mention, teach, or suggest a multi-dimensional abstract space. As such, the
2 Freeman does not, and can not, teach the act of “defining” relative in a multi-
3 dimensional abstract space,” as recited in claim 39.

4 Freeman fails to teach or suggest all of the elements of claim 39. As such, it
5 is believed that claim 39 is allowable over Freeman, and such allowance is
6 respectfully requested.

7 **Claims 40 – 45** each depend in some form from claim 39. As such, each of
8 claims 40 – 45 is necessarily allowable over Freeman by virtue of this
9 dependency. Each of claims 40 - 45 are also allowable for their own recited
10 features that, in combination with the features recited in claims 39, are neither
11 disclosed nor suggested by Freeman.

12 **Claim 46** stands rejected under 35 USC §102(a) as being unpatentable over
13 Freeman. As will now be described, it is Applicant’s position that Freeman does
14 not teach or suggest each of the elements of claim 46.

15 Claim 46 reads as follows:

16 46. One of more computer-readable media having computer-
17 readable instructions thereon which, when executed by a computer, cause
18 the computer to:

19 define at least two examples of a form in a multi-dimensional
20 abstract space, the multi-dimensional abstract space being defined by at
21 least one of an adjective and an adverb, a first of the example forms being
22 defined in a first position in the multi-dimensional abstract space and a
23 second of the example forms being defined in a second position in the
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1 multi-dimensional abstract space that is different from the first position;
2 and

3 compute a form in the first position such that when the computed
4 form is subjected to a transform blending operation that places the
5 computed form in the second position, it will match the second example
6 form.

7
8 As with claim 39, claim 46 has been amended to recite the at least two
9 examples being defined with respect to a multi-dimensional abstract space being
10 defined by at least one of an adjective and an adverb. As noted above, Freeman
11 does not mention, teach, or suggest a multi-dimensional abstract space. As such,
12 the Freeman does not, and can not, teach the act of “defining” relative in a multi-
13 dimensional abstract space,” as recited in claim 46.

14 Freeman fails to teach or suggest all of the elements of claim 46. As such, it
15 is believed that claim 46 is allowable over Freeman, and such allowance is
16 respectfully requested.
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1 Conclusion

2 Claims 1 – 46 are in believed to be in condition for allowance. Applicants
3 respectfully requests reconsideration and prompt issuance of the present
4 application. Should any issue remain that prevents immediate issuance of the
5 application, the Examiner is encouraged to contact the undersigned attorney to
6 discuss the unresolved issue.

7
8 Respectfully Submitted,

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10 Dated: 7/17/2003

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